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WESTERN CAPE COD: PLANT NOTES

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I am not a stranger to Cape Cod. My father came to visit the Cape first about 1885, and from then on made frequent trips from Boston by train in the summers. Therefore as a small child I remember seeing, in many visits, lupine and the Deptford pink in the lichen-covered fields at East Sandwich, which were then fairly open. They are now grown up into pitch pine, and everywhere pastures and hayfields have practically disappeared. The forest has greatly increased, due also to the lessening of forest fires, and now appears mainly as an expanse of oak and pitch pine occupying the terminal moraine, the backbone of the Cape. From 1917 on, the botanical trips led by Professor Fernald to the Cape were always enjoyable and instructive occasions. Summers from 1923 to 1926, while at the Marine Biological Laboratory at Woods Hole, Dr. John M. Fogg, Jr. and I made many botanical trips into the surrounding countryside; and again in 1928, Professor Fernald and I explored some of the relatively little-known parts of western Cape Cod.

Many things have changed. Some of the old roads are now blocked off, and I have been unable to locate the *Chamaecyparis* swamp in East Falmouth where we found *Rhododendron canadense* and *Aster nemoralis*. And I cannot find the interesting spot reported by me in *Rhodora* 30: 135 (1928), where *Lycopodium lucidulum*, *L. clavatum*, and

associated plants grew. Some of these places I suspect have been covered up by the Otis Air Field.

Since retiring to Cape Cod in early 1967, I have covered most of the old roads in western Cape Cod, to a large extent on foot, since many are no longer passable by automobile. The result is a fairly large number of plants scarce or previously unknown on Cape Cod. Those of which I can find no previous records from literature or from the extensive collections of the New England Botanical Club, I have marked by an asterisk. Specimens have been put in the herbarium of the New England Botanical Club.

In 1918 and 1919 Professor Fernald and Bayard Long found an interesting locality for plants at "Spring Hill", Sandwich. After a considerable search I found the locality, which is in East Sandwich. The beautiful maple and *Chamaecyparis* swamp is still intact. The sloping pastures have disappeared, and in many places have been replaced by a fearful tangle of *Smilax* (*S. rotundifolia* and *S. glauca*), called "catbrier" in Gray's Manual, but known more appropriately by the local inhabitants as "bullbrier" and "horsebrier". Intact also are the stands of yellow birch (*Betula lutea*), the spring-heads still have *Carex scabrata*, and on an adjacent knoll is native *Fraxinus americana*, as Fernald found it, along with *Carex laxiflora*, *Carex laxiculmis*, and *C. convulata*, as well as *Ranunculus abortivus* and *R. recurvatus*; and in 1967 there was a single flower of *Erigeron pulchellus*, which Professor Fernald's keen eye had recognized fifty years ago on the basis of only a single leaf. The small species of *Botrychium* (*B. matricariaefolium* and *B. lanceolatum*) I could not find; neither was there any trace of *Ophioglossum*, or of the silvery spleenwort, or of *Trillium* in flower. The presence of this little knoll with its fragment of rich wood's vegetation is hard to explain.

Scattered along the moist north slope of the terminal moraine, and at the margins of some ponds in the interior are small "forests" of beech, hornbeam (*Ostrya virginiana*), sweet birch, paper birch, flowering dogwood, hickories (*Carya glabra*, *C. ovalis*, and *C. tomentosa*), white

pine, and red oak. There is much resemblance to the flora of the northern part of Long Island, New York, where these species are also present. Likewise there is a single locality for hemlock. But the relative lack of mountain laurel on Cape Cod is a noteworthy difference.

Most of the ponds on Cape Cod, even the little ones, are in the process of becoming "lakes" bordered by house lots. Some of the names have changed from those on the old maps: Great or Nine-mile Pond in Barnstable (Centreville) is now Lake Wequaquet; Halfway Pond in Barnstable (Hyannis) is now Mary Dunn Pond. The political divisions are confusing, too. All the Cape belongs to Barnstable County. The village of Barnstable is on the north shore. The Town of Barnstable includes the villages of Hyannis (now a metropolis), Centreville, Osterville, Cotuit, Marstons Mills, and Santuit. Western Cape Cod, commonly known as the "Upper Cape", includes the separate towns of Barnstable, Sandwich, Mashpee, Falmouth (with Woods Hole and Waquoit), and Bourne (with Sagamore and Pocasset).

Isoetes Tuckermani A. Br. Lovell's Pond, Santuit (no. 1468). This is the common quillwort of Cape Cod ponds; it grows submerged in several feet of water. The megaspores average 520 μ , with a fragile jagged-crested honeycomb surface. It has been collected previously in Sandwich, Falmouth, Harwich, Brewster, and Wellfleet.

Ophioglossum vulgatum L. var. *pseudopodium* (Blake) Farwell. Thicket along east side of Santuit River, Cotuit (no. 811). The adder's-tongue fern has been known from Sandwich, Yarmouth, Dennis, Chatham, and Truro.

Osmunda Claytoniana L. Thicket along Sandwich-Cotuit Road near Wakeby Pond, Sandwich (no. 1483); along railroad near County Road, East Sandwich (no. 2046). I have seen it also along Discovery Hill Road in East Sandwich. In the New England Botanical Club Herbarium it is represented from Falmouth; from near Peter's Pond in Mashpee; and from the border of the maple swamp at "Spring Hill,

Sandwich". It occurs only on "Upper" or western Cape Cod (See Fogg, *Rhodora* 32: 176 (1930)).

Botrychium virginianum (L.) Sw. A single plant (fruiting) on a hummock beneath *Chamaecyparis*, growing with marsh fern, goldenrod, and *Mikania* at the edge of a brackish marsh (no. 661). This is a most unusual habitat for the rattlesnake fern, which would be hidden in a tangle of *Mikania* later in the season; it is known from Cape Cod only on the basis of a leaf fragment collected by Fernald and Long at "Spring Hill" in 1918.

Polypodium virginianum L. The polypody fern grows on several north-facing gravel banks on Cape Cod, just as it does on the coastal plain around Chesapeake Bay in Maryland. Usually I have found it on Cape Cod in groves of *Ostrya* where the ground slopes steeply to a pond, for example, the western side of Mashpee Pond where it is abundant in several large patches (no. 1798); Peters Pond, in South Sandwich (no. 1709); Lovell's Pond, Santuit. It is known from Bourne, Barnstable, Sandwich (near Wakeby Pond), Brewster, and Providence. In Brewster it was noted on a stone wall by Hunnewell and Blake, and on a large boulder in Naushon by Fogg, *Rhodora* 32: 227 (1930). The European *P. vulgare* I saw growing on gravel banks facing the sea near Cuxhaven, Germany, in 1958.

Polystichum acrostichoides (Michx.) Schott. The Christmas fern, rare on Cape Cod, is limited by Fogg (l.c.) to the Upper Cape, and known only from Barnstable Village, South Sandwich, and "Spring Hill". It also grows near Discovery Hill Road in East Sandwich (no. 668), and I have seen a single large plant in woods near Amos Pond in Mashpee.

**Juniperus communis* (L.) var. *depressa* Pursh, was reported from the north shore of Naushon by Fogg, where possibly introduced. It is apparently native in a sandy field on the east side of Wequaquet Lake, Centreville (no. 1325), and on a sandy roadside in West Barnstable (no. 1959), along route 6. The nearest mainland location for this plant

seems to be near the old Darby railroad station in Plymouth, where it was collected by Sanford in 1911.

**Tsuga canadensis* (L.) Carr. About twenty trees on a steep bank of an island in Mystic Pond, Marstons Mills (no. 1086). The trees are considered native by all the local inhabitants; there is no reason to believe otherwise. Some are two feet or more in diameter; several have had the tops blown off in recent hurricanes, and are branched from the lower part of the trunk. The nearest stands of hemlock appear to be at the Plympton-Kingston line in Plymouth County. A single large weatherbeaten tree may be seen along rte. 3, opposite Bloody Pond in southern Plymouth, about halfway between the Cape Cod and Kingston localities.

**Panicum amarum* Ell. Margin of sand dunes, marsh side, Sandy Neck, W. Barnstable (no. 1730). Only two clumps were seen; one greenish-flowered, the other purplish. They grew side by side. The plant is unknown north of New Haven, Conn. It is readily distinguished from *Panicum virgatum* by the decumbent habit, narrow inflorescence, and large spikelets, in this collection 6.0 mm long. The fresh anthers are lucid brown, glutinous, and 2.4-2.5 mm long in the purplish phase; 0.8-1.1 mm long in the green phase.

Panicum mattamuskeetense Ashe. It is a tall plant of the southern coastal plain which reaches its northern limit on Cape Cod, where it has been known from Falmouth, Dennis, Brewster and Harwich. It was abundant on damp sandy cart roads in West Yarmouth just over the Hyannis line (no. 1508), the leaves bluish-green when fresh; spikelets $2.3 \times 1.1-1.2$ mm, and the ligule 1-1.5 mm, though stated by Hitchcock to be 0.7 mm long, by Gleason 1 mm or more long, and by Fernald "less than 1 mm long." In a second locality, a sphagnous depression just north of rte 28 in Centreville (no. 1684), the spikelets were 2.0-2.1 mm long and 1.0 mm wide, and the ligule 0.5 mm long; evidently a small-fruited phase of *P. mattamuskeetense*, though in some respects the habit approached *P. spretum*. A third

collection (no. 1432), from plants abundant in the extensive boggy area, now being drained, west of Higgins-Crowell Road, West Yarmouth (and a continuation of the locality from which no. 1508 was obtained), the upper as well as the lower leaves are somewhat pubescent, and the plants approach *P. annulum* Ashe, which is considered by Fernald as perhaps not distinct from *P. mattamuskeetense*. The spikelets in no. 1432 are 2.5-3.0 mm long, the ligules are mainly 0.5-0.6 mm long, but may be as much as 1 mm long in the lower leaves. Typical *P. annulum*, with somewhat velvety leaves and large spikelets is known from only a single collection on Cape Cod: cranberry-bog roads east of Slough Road, Harwich, Fernald in 1918. My fourth collection (no. 1464; Aug. 1, 1968) came from the gravelly bed of a brook in Marstons Mills, where it was growing with *Xyris torta* and *X. caroliniana*. It had the erect growth of *P. mattamuskeetense*, pubescent spikelets averaging 1.7×1.0 mm and ligules 0.5-0.6 mm long. The small spikelets would tend to place the collection in *P. microcarpum* Muhl., but the spikelets of that species are described as "glabrous or rarely minutely pubescent" by Hitchcock & Chase; and in the 8th edition of the Manual as "glabrous (very rarely puberulent), 1.5-1.8 mm long, 0.7 mm broad". *Panicum microcarpum*, in which the autumnal form is "densely and intricately branched", is known from five collections on the Cape, ranging from Woods Hole to Orleans. I have seen it in Sandwich and Centreville, growing on moist grassy slopes. By Fogg, *Rhodora* 32: 211 (1930) it is considered characteristic of the "Middle Cape". The members of this *Panicum*-group are still puzzling.

Festuca obtusa Biehler. This grass is frequent in moist rich woods in the Boston district, but known only from Sandwich and Chilmark (Marthas Vineyard) in the southeast. In Sandwich it grows on a north-facing slope at Shawme Pond. It is now to be reported from the beech woods at the Cape Cod Museum of Natural History, Brewster (no. 2146).

**Molinia caerulea* (L.) Moench. In the report on grasses of the Flora of Massachusetts, *Rhodora* 49: 264 (1947), the "moor-grass" is reported only from waste land in South Boston. This handsome grass is growing well, and apparently spreading, on a sandy border of Forestdale Road in Mashpee (no. 1262; Nov. 1, 1967). It is common in Scotland, but I have seen it in this country only at Scott Center, Wayne Co., in northeastern Pennsylvania, in company with Mr. W. L. Dix (*Bartonia* 23: 41-42. 1945). There it occupied nearly an acre on a dry hillside.¹

**Aira praecox* L. Abundant on roadsides and in newly planted areas in Osterville (no. 711), forming a sort of turf in moist ground and reaching a height of 20 cm. It is also abundant along rte 28 in Mashpee and Santuit (no. 698). Previously *Aira praecox* has not been reported north of New Jersey, except from Nantucket in the recently published "Plants of Nantucket" by MacKeever, (1968). It commonly grows with *Aira caryophyllea*, which is also a native of Europe.

**Sporobolus cryptandrus* (Torr.) Gray. Abundant in a sandy field at the south end of Hamblins Pond, Marstons Mills (no. 1139). The spikelets are 1.9 mm long. It has previously been known from "sandy and gravelly soil; occasional in the Boston District chiefly near the seacoast, and at Scituate in Plymouth County", *Rhodora* 49: 273 (1947).

**Carex convoluta* Mackenzie. Open woods at edge of swamp at "Spring Hill", East Sandwich. The leaves reach 2 mm in width; culms are erect; perigynia are 3.0-3.5 mm × 1.5-1.7 mm; the achenes, excluding the tips, average 1.9 × 1.4 mm. Mr. Mackenzie told me that he could distinguish the three closely-related species (*C. convoluta*, *C.*

¹Dr. Hodgdon has asked me to include here a collection of *Molinia* made by David Wise and himself (no. 552) in September, 1959, on Isle au Haut, Maine. It covers a considerable area where it has persisted since it was first found there by Nathaniel T. Kidder in 1919. I might also mention that the "moor grass" appeared, along with heather and an *Erica* in the artificial bog at the Brooklyn Botanical Garden in the 1930's. They came from seeds in baled European peat-moss.

rosea, and *C. radiata*) in the field as far as he could see them, and I tend to agree with him. Measurements in the herbarium tend to overlap, and the natural appearance of the plant is commonly lost on the herbarium sheet. *C. convoluta* is common in woodlands of the Boston area, and runs southward into Dighton and Fall River in Bristol County. Another and earlier collection (no. 730) from the Cape Cod locality (June 13, 1967) is not quite mature; the perigynia average $3.0 \times 1.0-1.5$ mm.

**Carex vestita* Willd. Sandy margin of a cranberry bog, southeast of Amos Pond in Mashpee (no. 699), and close to, or on, the Sandwich line. The staminate spikes of the species are especially prominent. The plant is common around Boston, and is known from Scituate and Wareham in Plymouth County.

**Carex prairea* Dewey. Abundant in large tufts in fresh to brackish border of Bumps R., Osterville (no. 717). It is known from a few localities in northeastern Massachusetts, especially in the vicinity of Concord, but not from southeastern Massachusetts except on Nantucket, where it was collected by Bicknell.

**Carex exilis* Dewey. Dry opening in a little *Chamaecyparis* swamp, near the headwaters of Scorton Creek, East Sandwich (no. 679; June 4, 1967). A single fruiting plant was seen on Aug. 17, 1967 (no. 1049); in the wet summer of 1968, fruiting plants were more abundant.

**Carex Crawfordii* Fernald. A single large clump in gravel excavations along rte 6A in Sagamore (no. 1369), very close to the Sandwich line. In southeastern Massachusetts it has been known only from Harwich, where it was collected by Fernald and Long on June 25, 1918, and noted as "scarce, in dry sandy fields and borders of woods". *C. Crawfordii* is a common plant in the White Mountains, and in other parts of northern New England.

Carex scabrata Schwein. Spring-heads at margin of swamp along rte 6A, West Barnstable (no. 2003) in proximity to *Dryopteris Phegopteris* and *Luzula multiflora* var. *fusconigra*, plants likewise characteristic of northern New England. *C. scabrata*, which frequents woodland brooks,

extends south commonly to the Boston area. In southeastern Massachusetts it is known only from "Spring Hill", in East Sandwich.

**Carex laxiflora* Lam. Wooded knoll at edge of swamp, East Sandwich (no. 727; June 13, 1967, and no. 1991; May 25, 1968). This is the same location as "wooded springheads bordering maple swamp", *Fernald & Long* 18415, July 30, 1919, determined by Fernald as *C. leptoneuria* (likewise by Wiegand in 1922); and "rich wooded slope", *Fernald & Long* 18416, Aug. 9, 1919, determined by Fernald as *C. laxiflora* var. *blanda*, and in 1922 by Wiegand as *C. leptoneuria*. Both of their collections were made late in the season. The perigynia are poorly developed and show only slight nervation, which is not produced into ribs. Vegetatively they are similar to my collections which are in a fine stage of development. *C. leptoneuria*, therefore, can surely be deleted from the Cape Cod flora. *C. laxiflora* is common in the Boston region, and it extends south to North Easton and Rehoboth; it is not known from Plymouth County. *C. leptoneuria* extends south to the Blue Hills near Boston, and also to Attleboro in Bristol County. Both species are listed from Stoughton (Norfolk County) by S. F. Blake in *The Flora of Stoughton, Mass.*, published by the New England Botanical Club, 1963.

**Eleocharis tuberculosa* Michx. In sand and peat at margin of a cranberry bog, growing with *Rhynchospora capitellata*, East Sandwich (no. 1065). It is known from Plymouth County, and is of wide distribution on the coastal plain.

Lemna minor L. Specimens are recorded only from Barnstable, Brewster, Harwich, Eastham, Wellfleet, and Provincetown, but this little floating plant is probably of more general occurrence. Few people have seen *Lemna* in fruit. Fruiting collections were made by me at Santuit R., at head of tide (no. 1467; July 22, 1968), and in a small dried-out *Cephalanthus* swamp south of Hamblins Pond, Marstons Mills (no. 1190; Oct. 12, 1967). The utricles vary from glaucous purple to green, of a color similar to the spathes of skunk cabbage, they are obovate and strongly

flattened, 1 mm wide and 1 mm high. The seed lies crosswise in the utricle and is nearly terete, 0.8×0.5 mm in no. 1476; 0.7×0.4 mm in 1190. It is greenish-white, somewhat corky-inflated, strongly ribbed, obscurely cellular-reticulate, and sometimes with faint crossbars between the ribs. There is a prominent crimson-to-brown caruncle, but the operculum is inconspicuous.

In *Lemna perpusilla* the seed is also large, commonly 0.9×0.5 to 1.0×0.4 mm; it is loosely erect within the utricle, which is elliptic. In a collection made by Torrey on Staten Island, N.Y., in 1829 (Gray Herbarium), the utricles are about 0.75×0.5 mm, and the style varies from erect to oblique; I did not attempt to measure the seed. Plants which I collected in the Galápagos Islands and the coast of Ecuador under the name *Lemna minor* Philippi have been relegated to *H. perpusilla* by E. H. Daubs, Univ. Illinois Mon. no. 34. 1965, but the seeds are small, only $0.35\text{-}0.4 \times 0.2$ mm. They are erect, terete, longitudinally ribbed with conspicuous cross partitions and completely fill the utricles. Their size and configuration is not at all that of *L. perpusilla*. Clearly more taxonomic work on the utricles and seeds of *Lemna* is needed.

Lemna valdiviana Phil. Forming small tangled submerged clumps, as is usual in the species, in a pond at Discovery Hill Road, East Sandwich (no. 1703). It has been known from Woods Hole and Hyannis.

Spirodela polyrhiza (L.) Schleiden. Pond at Discovery Hill Road, East Sandwich (no. 1703A). It has been known previously from Falmouth (see Fogg, *Rhodora* 32: 106 (1930)), and in 1938 from Marstons Mills (*Seymour*).

**Luzula multiflora* (Retz.) Lejeune var. *fusconigra* Celak. Mossy hummock beneath large beech tree, at edge of a swamp along rte 6A, West Barnstable (no. 1999). The leaves are narrow, mostly less than 2 mm wide, the inflorescence tends to be congested, and the perianth is deep brown, almost black. It is known from eastern Canada, and southward definitely to Old Orchard, Maine.

Trillium cernuum L. Nearly a hundred plants in flower May 31, 1967, excavation in wooded slope, East Sandwich (no. 656). Previously it has been known from "Spring Hill" (see introduction).

Goodyera pubescens (Willd.) R. Br. Depression in *Cornus florida* "forest", east of Johns Pond, Mashpee (no. 2008). The only previous Cape Cod record is from Jenkins Pond, Falmouth, in 1911 and 1912.

Spiranthes Grayi Ames. Sandy field, Osterville (no. 1062). This little orchid has been known from Pocasset, Falmouth, Centreville, Brewster, Harwich, Eastham, and Truro.

Betula lenta L. Abundant large trees (one foot or more in diameter) in woodland, east side of Wakeby Pond, Sandwich (no. 1179). The sweet or cherry birch, known locally as "red birch", forms extensive stands also in the Lowell Holly Reservation in Mashpee, just to the southward. In a mimeographed list of plants compiled for the Lowell Holly Reservation in 1961 by Stephen Hamblin — whom many of us will remember at the Harvard Botanic Garden — *Betula lenta* is listed as a native tree. Mr. Hamblin retired to Santuit and wrote up the account for President Lowell. After Mr. Hamblin's death in 1966, the list was given to the Cape Cod Museum of Natural History at Brewster. The birch grows also on the opposite shore of Mashpee Pond at the narrows. The nearest localities for *Betula lenta* appear to be at the Plympton-Kingston boundary in Plymouth County. As Mr. Hamblin states, the Reservation "represents the native vegetation of upper Cape Cod, undisturbed by fire or cutting for at least two or three hundred years".

Betula lutea Michx. A single tree, the five trunks each about 8 inches in diameter at border of pond, Discovery Hill Road, East Sandwich (no. 674). This locality, west of the previously mentioned locality at "Spring Hill", appears to be the only additional Cape Cod occurrence of the yellow birch, except at Shawme Lake, Sandwich, mentioned by me in *Rhodora* 31: 80 (1929). John Hay, President of the Cape Cod Museum of Natural History, and I were un-

able to find the yellow birch mentioned by Mr. Hamblin in the Lowell Holly Reservation list, but we did find several trees of paper birch, omitted from the list.

Betula papyrifera Marsh. There is only one Cape Cod specimen of the paper birch in the Herbarium of the New England Botanical Club. It is from the "rich wooded slope at Spring Hill, *Fernald & Long*, Aug. 9, 1919." But it is more widespread. Trees have been planted along the main highway, rte 6, but native trees are scattered in many places. The finest trees are to be found on the north-facing moraine slope east of Atkins Road in East Sandwich, where they have been carefully preserved in land clearing. They are a little over 1 ft. in diameter. The greatest assemblage of trees appears to be at the north end of Santuit Pond in Mashpee. I have also seen a tree at the south side of Lovell's Pond, Santuit (no. 1890), another in Osterville, and scattered trees in Falmouth. Most of the trees have the appearance of those on Long Island, New York, where they occur on the terminal moraine at Wyandanch.

Castanea dentata (Marshall) Bork. Two clumps, each about 10 ft. high, vigorous though half-blighted, Old Jail Road, West Barnstable (no. 1763; Sept. 10 1968). The only specimens at the N.E.B.C. are from Yarmouthport (1907), and Bourne (1918). According to reports of older inhabitants the chestnut was only occasional on Cape Cod.

Quercus rubra L. Large tree on sandspit between Middle and Mystic Ponds, Marstons Mills (no. 1961; Jan. 27, 1968). Around these ponds is probably the largest assemblage of red oaks on Cape Cod. The best time to see them is when the ponds are frozen. While ice-fishing I counted over twenty trees on the above date. There are probably many more; the trees can be most easily recognized by the large flat cups on the ground. Large tree overhanging the water, Mashpee Pond, Mashpee (no. 1180). Mr. Hay and I counted nine trees in the adjacent Lowell Holly Reservation, where the red oak was not mentioned by Mr. Hamblin. There is also a group of red oaks at Discovery Road in East Sandwich, the largest 33 inches in diameter. The red oak is

otherwise known on Cape Cod (specimens in the N.E.B.C.) only from Wellfleet, and from Cliff Pond and No Bottom Pond, both in Brewster.

Ceratophyllum demersum L. Fruiting plants in ditch in cranberry bog, East Sandwich (no. 1068). Previously it has been collected in Chatham and Eastham. Fruiting material, rarely seen, was obtained by Fogg at Oyster Pond, Falmouth (Rhodora 32: 107 (1930)).

Thalictrum revolutum DC. Roadside, near Cotuit R., Mashpee (no. 794). It is one of the plants characteristic of the Upper Cape (Fogg, Rhodora 32: 176 (1930)), previously known from Woods Hole, Falmouth, Sandwich, and Centreville.

Nasturtium officinale R. Br. There are no specimens from Cape Cod, but the plant is abundant in several streams, including Mashpee R., Mashpee (no. 705); Santuit R., Cotuit (no. 805); and Herring Brook, North Falmouth (no. 2072). The siliques of 2070 (June 8, 1968) are rather small, averaging 8×2 mm; the style 0.8×0.4 mm. The other collections were only in flower.

Ribes hirtellum Michx. var. *calcicola* Fernald. Tidal banks of Marstons Mills R., Marstons Mills (no. 1451; July 29, 1969), in fruit. The fruits are smooth, red and glaucous, 1 cm wide when flattened. Seeds, apparently not previously described, are lucid brown, somewhat flattened, irregularly ovate, and $4-5 \times 1.5$ mm. They are surrounded by an adherent gelatinous substance. Var. *calcicola* was described from calcareous swamps of Gaspé, Quebec, with "young branches, petioles, and lower leaf-surfaces permanently and densely white tomentose". Many collections from Cape Cod have been so named, but whether they exactly represent var. *calcicola* is open to question. Petioles in no. 1451 are pubescent, but the leaves are only hirtellous on the veins beneath. The plant is to be expected in thickets at the head of tidal streams throughout Cape Cod.

**Crataegus monogyna* Jacq. The European hawthorn has not been reported from Cape Cod, but small trees are abundant along the railroad east and west of West Barnstable

station, altogether for at least a mile (no. 744, in flower June 11, 1967; in fruit, July 30, 1968).

Corema Conradii Torr. Open hilltops under pitch pines north of DeGrass Road, South Mashpee (no. 1096). It is also known from North Falmouth, Osterville, Dennis, and West Brewster, but mostly it has been associated with the open sands extending from Eastham to Provincetown. In the middle and western part of the Cape it forms a springy carpet beneath pitch pines. Consequently there is no reason to question its being native in the Lowell Holly Reservation, where it was reported by Mr. Hamblin, and where it has been known for a long time. My first acquaintance with *Corema* was in the sands of Wellfleet and in similar situations in the New Jersey Pine Barrens, where Witmer Stone (Rept. N.J. State Museum, 1910) says it is "an inhabitant of those desolate stretches of white sand which cover the most elevated portion of the Pine Barren region, stretching away for some thirty square miles." As I have seen the plant on the Maine coast in hills north of Camden, and on the promontory known as "Gertrude's Nose", in the Shawangunk Mts. of southern New York, it does not grow in sand. It is listed in Gray's Manual, ed. 8, from "sandy pinebarrens, sandhills and siliceous rocks".

**Rhamnus frangula* L. Tree about 15 ft. high, in swamp along railroad, East Sandwich (no. 1198; Oct. 17, 1967, in fruit). Hodgdon and Krochmal (Rhodora 52: 163 (1950)), discuss the presence and spread of this species in New Hampshire.

Circaea quadrisulcata (Maxim.) Franch. & Sav., var. *canadensis* (L.) Hara. Moist woods along Marston Mills R., below rte 28, Marstons Mills (no. 1452). It has been found previously in Bourne, Falmouth, Sandwich, and Brewster.

Rhododendron canadense (L.) Torr. Rhodora in flower, June 2, 1967, occurring over nearly an acre southeast of Johns Pond (no. 664). The area is now bisected by a power line, which may help in preservation.

Kalmia latifolia L. Bushes to 6 ft. high, abundant on steep slopes at east side of Long Pond, Newtown, Barn-

stable (no. 655). The mountain laurel has not been reported previously from Cape Cod, but Miss Eda M. Roos of East Sandwich informs me that it has been known as a native plant for more than a half century near the north end of Wakeby Pond, which is close by. It is surprising that this bush, so abundant on Long Island, should be of such limited occurrence on Cape Cod.

Gentiana crinita Froel. The fringed gentian, as in most other places, tends to be sporadic in occurrence. It has been known for a long time at East Sandwich, sometimes in profusion, at other times scarce. I collected it on Nov. 9, 1966. For the past two years it has not made an appearance, but will probably do so when conditions for growth are favorable. It is known from several localities in Plymouth County.

Bartonia paniculata (Michx.) Muhl. *Chamaecyparis* swamp, South Main St., Centreville (no. 1053; Aug. 20, 1967). The material is slender, and greatly resembles the illustration of *B. tenella* in *Rhodora* 2: pl. 15, f. 6 (1900). The leaves are subulate, purplish on the lower part of the stem, green on the middle and upper part. Anthers very from purplish to dark yellow. Bicknell (*Bull. Torr. Cl.* 42: 33. 1915, and 46: 423. 1919) found similar intermediate plants on Marthas Vineyard and Long Island. On Cape Cod, *Bartonia paniculata* has been previously known from Barnstable and Dennis.

**Myosotis scorpioides* L. Densely covering extensive areas in Santuit R., Cotuit (no. 752). The European forget-me-not has not been recorded from the Cape.

**Orobanche uniflora* L. Springy hummock below *Chamaecyparis*, at edge of brackish marsh, Bumps R., Osterville (no. 678). Known southward to the Taunton and New Bedford area in Bristol County.

Jasione montana L. Sandy fields, Osterville (no. 817). For many years this handsome blue-flowered plant was known only in the vicinity of the cemetery at East Sandwich. It now appears to be spreading rapidly, and is abundant at the south end of Hamblins Pond in Marstons Mills.

Erigeron pulchellus Michx. On knoll at edge of swamp at "Spring Hill", East Sandwich (no. 720). In the dry summer of 1927, the plants occupied an area about 2 feet square, and I found a single flower. In 1968, a wet summer, everything was overgrown and I could find no trace of the plants. The nearest locality is New Bedford.

OSTERVILLE, MASS. 02655